IN THE CLAIMS

1. – 16.   (Canceled)

17.   (Currently Amended) A method for analyzing a candidate compound for a biological activity of interest, the method comprising:

contacting a test <u>mammalian</u> cell culture with said compound, wherein said culture comprises a plurality of factors ~~in an amount sufficient to induce a plurality of pathways~~ <u>wherein a plurality of signaling pathways are induced by the presence of the factors</u>;

measuring at least two parameters associated with said plurality of pathways and comparing the measurement of said at least two parameters with the measurement from a control cell culture lacking said compound, and

recording said measurements of said test cell culture and said control cell culture to produce a biological dataset profile, wherein said biological dataset profile is indicative of the pathways that are active in said cell culture.

18.   (Withdrawn) The method of Claim 17, wherein said test cell culture and said control cell culture comprise at least two different cell types.

19.   (Previously Presented)   The method of Claim 17, wherein said cells are primary cells.

20.   (Previously Presented)   The method of Claim 17, wherein said test cell culture comprises at least one activator of a pathway active in said cell culture.

21.   (Previously Presented)   The method of Claim 17, wherein said test cell culture comprises at least one inhibitor of a pathway active in said cell culture.

22.   (Previously Presented)   The method of Claim 17, further comprising the step of compiling a plurality of said biological dataset profiles in a database.

23.   (New)   A method for characterization of a biologically active agent, the method comprising:

contacting said agent with human primary cells in at least one cell culture assay combination comprising at least two factors acting on said cells;

recording changes in at least three different cellular parameter readouts as a result of introduction of said agent;

deriving a biomap from said changes in parameter readouts, wherein said biomap comprises data normalized to be a ratio of test to control data on the same cell type under control conditions in the absence of said biologically active agent, and said parameters are optimized so that the set of data in the biomap is sufficiently informative that it can discriminate the mechanism of action of said agent;

analyzing said biomap by a multiparameter pattern recognition algorithm to quantify relatedness of said biomap to reference biomaps that include known agents that target specific pathways, wherein the presence or absence of relatedness to said reference biomaps provides a characterization of said agent.